

Statement of Problem

The Massachusetts Department of Public Health analyzes substances suspected to be illicit drugs, for local, state and federal law enforcement, in accordance with Chapter 111, Section 12, of the Massachusetts General Laws. Qualitative identification of narcotics, common street drugs, and pharmaceuticals is conducted by the Division of Analytical Chemistry, Forensic Drug Laboratories in both the Jamaica Plain (Boston) and Amherst facilities. The laboratories employ 3 evidence officers and 19 analysts and laboratory supervisors. The staff uses Drug Enforcement Authority (DEA) methodology to analyze unknown specimens by a variety of visual, microscopic, wet chemical, chromatographic and spectroscopic techniques. Massachusetts laws stipulate that Drug Laboratory Certificates of Analysis are *prima facie* evidence in local and state jurisdictions, however, chemists are occasionally subpoenaed to testify as to the methodology employed in a given case in state court.

As law enforcement efforts have focused on possession and sale of illegal drugs, sample submissions to the laboratories have risen steadily. In calendar year 2006, the Forensic Drug Laboratories received 43,092 specimens for testing, an 11% increase over the preceding year which was 10.5% more than in 2004. Laboratory staffing levels and fiscal appropriations have remained constant despite the increasing work load. The complexity of sample submissions; i.e., higher number of cases involving drug trafficking and the analytical challenges presented by the analysis of crack cocaine, GHB and ketamine, further exacerbate the already stressed system. The current sample backlog is 7,600 specimens with a 90⁺ day turnaround time.

In 2006, the US Department of Justice strengthened its efforts to identify dangerous youth and gang members in local communities responsible for the most heinous violent crimes. Not surprisingly, these individuals are frequently involved in illegal drug activities. Federal attorneys have found that the most effective means of incarcerating these individuals is through prosecution for violations of the federal drug statutes. Accurate and timely identification of drug seizure evidence is an integral component of a successful federal prosecution. In 2006, federal attorneys submitted 40 gang-related cases for analysis. While these cases comprise a relatively small proportion of the total case load the analysis is time and labor intensive. Analysis of federal cases is time-sensitive and require a different and more complicated testing algorithm than is used for routine drug submissions. Federal sentencing guidelines are more stringent than Massachusetts state guidelines, resulting in additional time needed to weigh and test the samples. For example, additional infrared spectroscopy testing is required to differentiate between cocaine base (crack) and cocaine salt. The specificity of the sentencing guidelines has also served to increase the demand for independent chemist testing in recent years; Massachusetts chemists must accompany all independent chemists to insure sample integrity, further limiting time that could be spent performing specimen analysis.

Federal courts do not accept Drug Certificates as *prima facie* evidence, requiring analysts to testify in each case. The additional analytical requirements and mandatory analyst testimony in federal court have exceeded the capacity of the existing system, resulting in

delays in testing and reporting of these important sample results. The US Attorneys' Office projects a 50% increase in drug submissions in calendar year 2008 as a result of intensified efforts by the Anti-Gang Initiative. The Massachusetts State Laboratory chemists currently spend a disproportionate amount of time on federal cases versus state cases, and the laboratory will be unable to meet the increased demand for testing these high priority specimens given its present staffing.

Program Description/Executive Summary

In response to three of the critical priorities articulated in the Department of Justice 2007 Byrne Grant announcement, *Youth Violence* and *Drugs*, the Massachusetts Department of Public Health proposes a streamlined approach for the identification of U.S. Attorneys' Office cases and expedited analysis of drug seizures associated with these cases. The *FedTest Program* will provide an experienced analytical staff member who would serve as the laboratory liaison to the US Attorneys' Office to ensure appropriate prioritization of pending cases, consistency of programmatic activities, and an informed point of contact for data sharing. Most importantly, this senior level chemist will be the dedicated analytical resource for the expedited analysis of drug seizures from cases involving high profile gang members submitted by the US Attorneys' office.

In order to provide additional analytical capacity and reduce sample turnaround time, the laboratory will modify sample submission processes for evidence submitted by the Anti-Gang Unit. Drug seizures will be triaged to ensure that the highest priority investigations are accurately analyzed in an efficient manner. Given the anticipated increase in specimens of this type, assigning a chemist whose primary responsibility is to test this evidence and report the results insures a reliable approach to effectively manage the workload. An experienced forensic chemist with sufficient technical knowledge and excellent organizational skills will allow for refinement of the existing testing algorithm to increase sample throughput and reduce processing time. Opportunities for automation, enhancements to information technology systems, and the utility of emerging technology will be evaluated within the context of improving laboratory processes to maximize sample throughput and to the laboratory's commitment to total quality management. Inherent in the *FedTest Program* is the need for a separate and unique document management system to provide ready access to all data related to a specific drug case. Systems currently utilized by other forensic laboratories in the region will be considered prior to implementation of a new system at the MDPH laboratory.

Implementation of the *FedTest Program* will result in increased capacity for testing illicit drugs and significantly reduce the turnaround time for cases submitted by the US Attorneys' Office.

Program Goals, Objectives and Performance Measures

The goals of the *FedTest* Program are to expedite laboratory testing of drug seizures from high priority investigations as identified by the U.S. Attorneys' Office by developing additional analytical capacity to maximize sample throughput. Turnaround time is an easily quantifiable measure that can be used to evaluate the efficacy of the program. The laboratory expects to achieve a 50% reduction in sample turnaround time upon successful implementation of the program.

The Massachusetts Department of Public Health Laboratory proposes the following objectives to meet the *FedTest Program* goals:

- *Hire an experienced analytical chemist to serve as a liaison to and provide expedited drug evidence testing for the U.S. Attorneys Office;*
- *Attend additional training in forensics offered through the Drug Enforcement Authority and expert witness testimony available through the US Attorneys' Office;*
- *Evaluate and refine sample submission, analysis and reporting protocols with the intent to streamline processes and increase efficiency; and*
- *Consider a distinct and comprehensive system for documents management related to federal cases.*

Success of the program will be measured by the ability of the laboratory to demonstrate progress towards the desired goals and objectives. Quantifiable indicators of program achievement include:

- *Attracting a highly skilled analytical chemist, preferably with forensics experience;*
- *Providing the appropriate supplemental and continuing education training;*
- *Developing program deliverables - procedures, protocols and documents management system;*
- *Quarterly assessment of turnaround times and quantitative measurement of progress; and*
- *Annual evaluation of program activities within the context of continuous quality improvement for the purpose of meeting the goals of the FedTest Program.*

Implementation Plan and Timeline

Implementation of the *FedTest Program* would begin immediately upon notice grant award in November 2007.

November 2007

- *Craft job description, post vacancy and begin recruitment of chemist.*
- *Meet with US Attorneys' Office representatives to begin work on improved sample submission processes*
- *Advertise for a qualified chemist.*

December 2007

- *Hire chemist.*
- *Conduct in-house orientation and training.*
- *Develop protocols and procedures for streamlined sample submission, analysis and reporting protocols.*

January 2008

- *Pilot test new protocols and modify as necessary.*
- *Initiate FedTest, expedited analysis of drug seizures confiscated in gang-related crimes.*

Spring 2008

- *Evaluate program efficacy by measuring improvement in sample throughput and turnaround time.*
- *Cross-train an additional staff supervisor in FedTest procedures to provide testing redundancy and surge capacity.*
- *Attend DEA training for forensic chemists.*

Summer 2008

- *Evaluate program efficacy by measuring improvement in sample throughput and turnaround time.*
- *Attend training related to providing expert witness testimony.*

Fall 2008

- *Evaluate program efficacy by measuring improvement in sample throughput and turnaround time. Consider solutions to improve the existing program and improve overall efficiency.*